AM-FM STEREO RECEIVER *model Eleven II* INSTRUCTION MANUAL

the sound approach to quality
KENWOOD

INTRODUCTION

Thank you for purchasing our receiver. Because we take great pride in the long tradition of quality components the name Kenwood represents, your purchase of a Kenwood receiver places you in a distinguished family of connoisseurs of superb high-fidelity sound reproduction.

The purpose of this manual is to acquaint you with the operating features of your new receiver. You will notice that in every detail of planning, engineering, styling, operating convenience, and adaptability, we have sought to anticipate your needs and desires.

We suggest that you read this manual carefully. Knowing how to set up your receiver, to the best advantage, will enhance your listening pleasure right from the start. You will also become aware of the ease with which you can adjust your receiver to meet your special requirements.

Turn the pages and become acquainted with the exciting features of your new receiver, features that will remain new for endless hours of listening pleasure.

CONCERNING TRANSISTORS

Transistors require special attention to ensure their full performance capabilities.
Given proper care, transistors will provide years of practically troublefree performance.

(a) Avoid locations subject to direct sunlight.
(b) Avoid high or low temperature extremes.
(c) Keep the receiver away from heat radiating sources.

PROTECTION CIRCUIT

The newly developed protection circuit is completely effective and prevents damage which may be caused by short-circuiting at the speaker terminals or the power output circuit of the receiver. When a short-circuit occurs, this protection circuit will function automatically to protect the power output transistors. If the power output transistor fails, this protection circuit will function automatically to protect the speakers.

NOTE

It is very important to check the Voltage Selector Switch setting and make sure that it corresponds to your line voltage before connecting the power cord into an AC outlet. If the Voltage Selector requires re-setting, follow the directions outlined on page 16.

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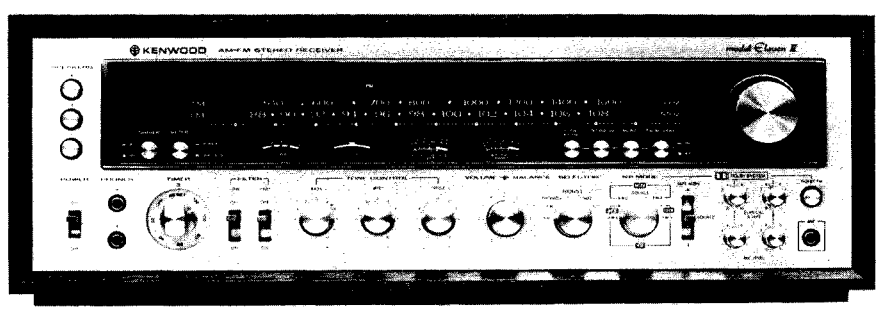
FEATURES

1. Junction-type FET in front end designed for less intermodulation distortion assures high sensitivity.
2. Use of 4-element Phase-linear type Ceramic Filter in IF section.
3. Coincidence type IC with excellent phase chracteristics at high frequency levels in PLL MPX section assures high stability and separation.
4. Direct-coupled Pure Complementary Circuitry in main amp and use of differential amplifiers for initial stages.
5. ASO Detector Limiter Protection Circuitry povides protection for costly power transistors while a High Sensitivity Relay with Gold Flash contact protects your speakers, thus assuring maximum security.
6. Built-in Dolby* N.R. Unit.
   Dolby recordings or Dolbyized playbacks make possible using even non-Dolby tape decks (cassette or open decks).
7. Timer on Front Panel (Up to about 2 hours)
8. Convenient and Versatile Meter
9. Other Features
   - ★ Three pairs of speaker systems can be connected
   - ★ Tape monitoring and dubbing switches convenient for tape editing
   - ★ 2 PHONO inputs
   - ★ Bass, Mid and Treble tone controls
   - ★ FM Muting
   - ★ Mode Selector
   - ★ Loudness Control
   - ★ 2 Headphones Jacks
   - ★ Microphone Jack
   - ★ Function Indicator
   - ★ Speaker Indicator
   - ★ LED Dial Pointer

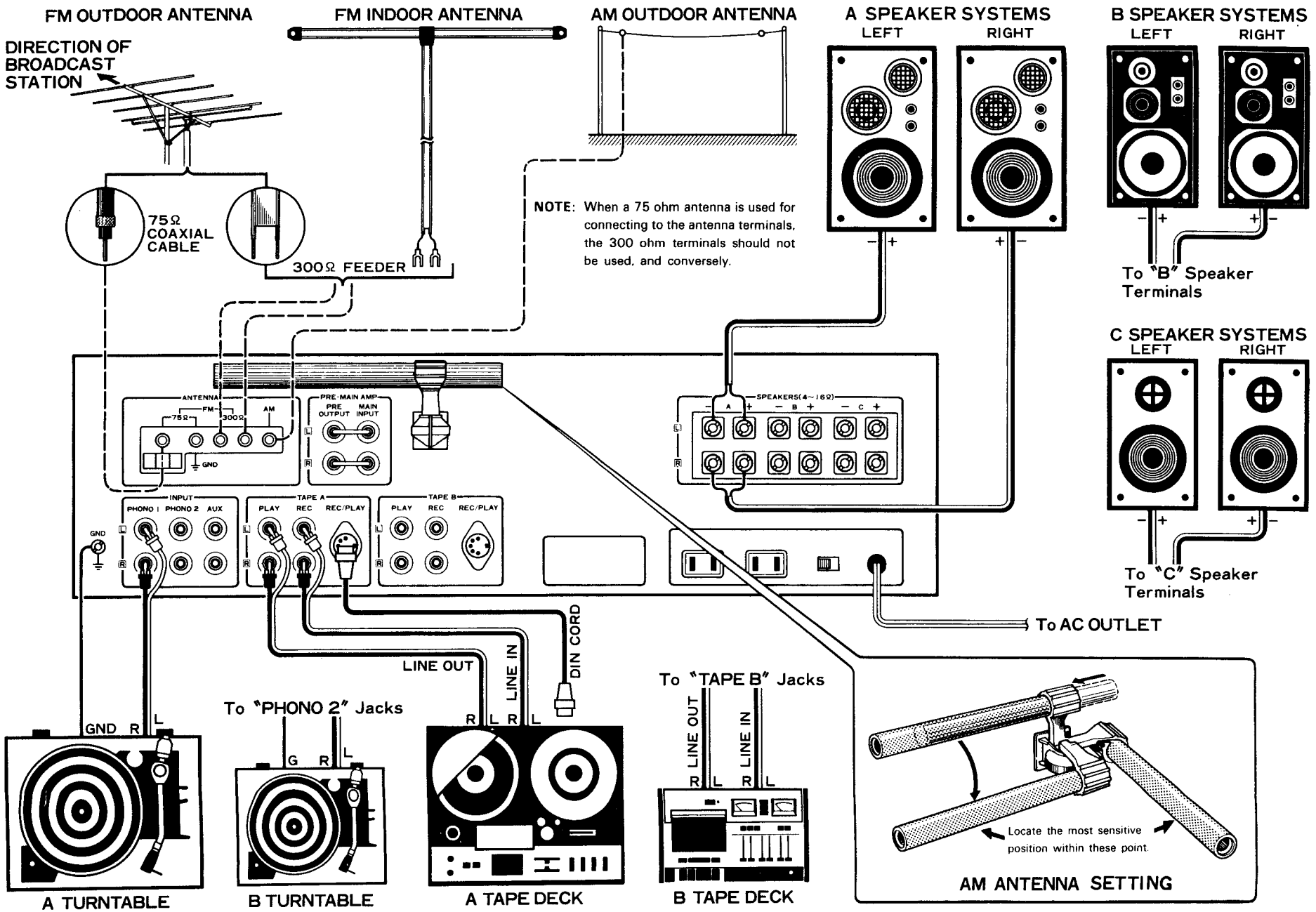
   * Dolby and the double-D symbol are the trade mark of Dolby Laboratories Inc.



WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

INTERCONNECTING DIAGRAM



CONNECTING INSTRUCTIONS

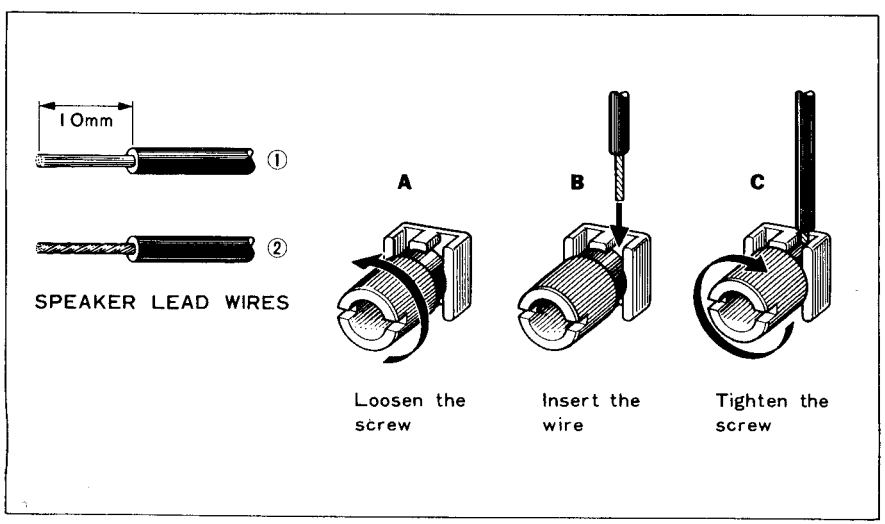
SPEAKER CONNECTIONS AND SPEAKER SWITCH

1. **When One Pair of Speakers are Connected**
   The speakers should be connected to the "A" terminals. Only the corresponding speaker "A" button on the front panel should then be pushed to activate these speakers.
2. **When Two Pairs of Speakers are Connected**
   Connect the two pairs of speakers to the A and B speaker terminals. Push A button for A, and B button for B speaker system response. Push both A and B buttons in if you wish to have speaker response from both systems.

   NOTE: No response will be obtained if both B and C buttons are pushed in when only one speaker is thus connected.
3. **When Three Pairs of Speakers are Connected**
   Connect the three pairs of speakers to the A, B and C speaker terminals. Push in only the corresponding button of the speaker system from which response is desired.

   NOTE: If three pairs of speakers are used at the same time, a speaker must have an impedance of 8 ohms or more.

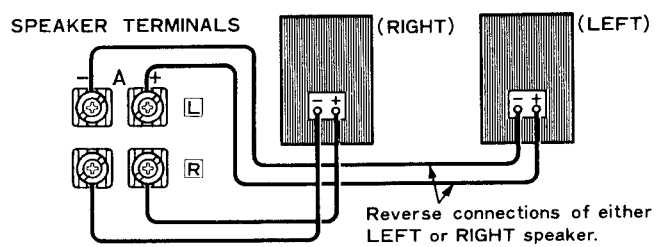
It is recommended that the tips of the speaker leads are soldered, or they are twisted together to eliminate any possibility of short-circuit in the speaker connecting network.



PHASING OF THE SPEAKERS

Speaker phasing can be determined in the following manner:

1. Set the INPUT SELECTOR switch to FM.
2. Set the MODE switch to MONO.
3. Tune in the desired station with the TUNING knob.
4. If the sound is coming directly from the front, the speakers are in phase. If the sound comes from both sides and there is a noticeable loss in low frequencies, the speakers are out of phase. In this case reverse the leads on one speaker.



CONNECTING INSTRUCTIONS

ANTENNA CONNECTIONS

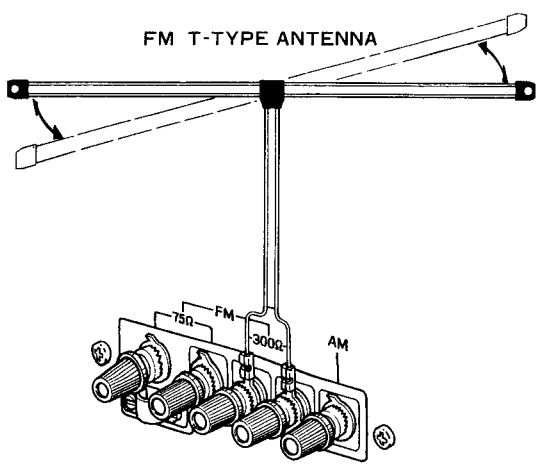
Connecting The FM Antenna

Since FM broadcast signals travel along a straight, direct-line path, they become rather weak behind hills and buildings even in the vicinity of a broadcasting station. FM signals also become weak in areas distant from a station even though there may not be any obstruction to the direct-line path of the signal. Therefore, a good FM antenna should be installed in the most effective manner for best possible FM reception.

In areas near the FM station, where signals are strong, stretch the T-type indoor antenna that is supplied, to its maximum, and connect it to the FM 300 Ω ANTENNA terminals. This antenna should be carefully hung in the direction that provides best reception and clarity.

In areas subject to FM multipath interference such as locations behind hills or in the shadow of buildings, an outdoor FM antenna should be used. An outdoor FM antenna is also recommended for the reception of weak and distant FM stations. Connections should be made as follows: 300 ohm twin leads should be connected to the FM 300 Ω terminals, and 75 ohm coaxial cable to the FM 75 Ω terminals.

NOTE: Consult audio dealer for detailed information on FM antennas and coaxial cable installations.



TWIN LEAD (300Ω) CONNECTION

Connecting The AM Antenna

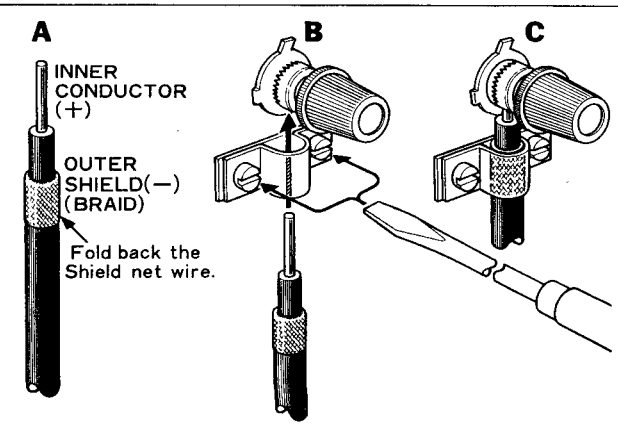
The AM ferrite antenna assures optimum AM reception. In fringe areas or in locations surrounded by steel frame buildings where satisfactory reception cannot be obtained with the ferrite loopstick antenna, an AM outdoor antenna should be connected to the AM terminal.

TURNTABLE CONNECTIONS

The two shielded audio cables from your stereo turntable are normally terminated with phono plugs. Connect the left channel of the turntable to the "L" PHONO 1 input jack, and the right channel to the "R" PHONO 1 input jack.

If an additional turntable is used in order to operate two turntables, connect the left channel to the "L" PHONO 2 input jack, and the right channel to the "R" PHONO 2 input jack.

If the turntable has a grounding wire, connect it to this receiver's GND terminal to avoid hum.



Strip the coaxial cable as shown in (A).
Loosen the screws and connect the cable as shown in (B).
Then tighten all screws for a connection like (C).

COAXIAL CABLE (75Ω) CONNECTION

CONNECTING INSTRUCTIONS

TAPE DECK CONNECTIONS

Recording

A tape deck can be connected for recording as follows. Left channel input of the tape deck to TAPE A "L" REC jack. Right channel input of the tape deck to TAPE A "R" REC jack.

Playback

A tape deck can be connected for playback as follows. Left channel output of the tape deck to TAPE A "L" PLAY jack. Right channel output of the tape deck to TAPE A "R" PLAY jack.

DIN CONNECTOR (REC/PLAY CONNECTOR)

If your tape deck is equipped with a DIN connector, connect it to the REC/PLAY connector with a DIN connecting cord. A DIN connector enables recording and playback with this single cord.

NOTE: When a DIN cord is used for connecting to the tape deck, the PLAY and REC jacks should not be used.

AUX (AUXILIARY INPUTS)

High level AUX input jacks are for miscellaneous sources, such as extra tape decks, additional tuners and other external components.

AC OUTLETS

The AC outlets on the rear panel of the receiver may be used to supply power to other components such as a turntable, tape deck, etc.

1. SWITCHED outlet
   This outlet is controlled by the POWER switch and the Timer on the front panel. (The capacity is 200 watts maximum.)
2. UNSWITCHED outlet
   This outlet delivers power at all times. (The capacity is 200 watts maximum.)

NOTE: Never connect to these outlets any equipment whose power consumption exceeds 200 watts.

PRE OUTPUT MAIN IN

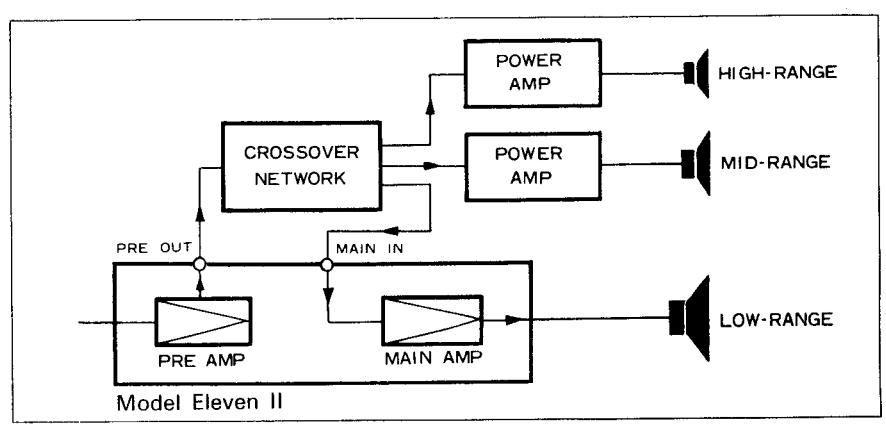
By utilizing these jacks and interconnecting with other equipment as shown in Figure below, the Model Eleven II can be used for multi-channel system. Moreover, by simply connecting an adaptor to these jacks, a 4-channel reproduction can be enjoyed.

In such a case, the bridge connecting plugs must be removed.

Use of the multi-amplifier system is as follows.

1. Remove both of the plugs bridging the PRE OUT and MAIN IN jacks.
2. Connect the PRE OUT jacks to the input jacks of the crossover network.
3. Connect the MAIN IN jacks to the output jacks of the crossover network.

NOTE: For detailed instructions on connections, etc., see the instruction manual supplied with the adaptor.



Model Eleven II

CONTROLS AND THEIR FUNCTIONS

① SPEAKERS switch

SP. A —Selects speakers connected to A output terminals on the rear panel.
SP. B —Selects speakers connected to B output terminals on the rear panel.
SP. C —Selects speakers connected to C output terminals on the rear panel.
For private listening through headphones, return all the SPEAKER buttons to OFF position.

② POWER switch

ON — This position the receiver turns on.
OFF — This position the receiver turns off.

③ PHONES jacks

Plug a stereo headphones into these jacks.

④ TIMER

The model Eleven II is equipped with a TIMER control which enables turning off the set automatically at any predetermined time whithin two hours from the time of setting. The AC convenience outlets on the rear panel marked SWITCHED 200W is controlled by this switching circuit.
If the time pointer is set too far ahead, for example, if it is set at 120 minutes when 60 minutes is desired, the pointer may be turned back in a counterclockwise direction to the desired setting. This, however, requires the application of more force than that required for moving pointer in a clockwise direction.

NOTE: This switch should always be kept at the RESET position whenever the timer action is not required.

⑤ LOW and HIGH FILTER switches

LOW FILTER — Setting this switch to on reduces low frequency noise such as turntable rumble, etc., which may interfere with program material.

HIGH FILTER — Setting this switch to on reduces any high frequency noise such as tape hiss, record scratches, etc.

⑥ TONE controls

BASS control — Turning it clockwise increases bass tone and counterclockwise decreases it. Response is flat at zero position.

MID control — Turning it clockwise increases mid range tone and counterclockwise decreases it. Response is flat at zero position.

TREBLE control — Turning it clockwise increases treble tone and counterclockwise decreases it. Response is flat at zero position.

⑦ VOLUME and BALANCE control

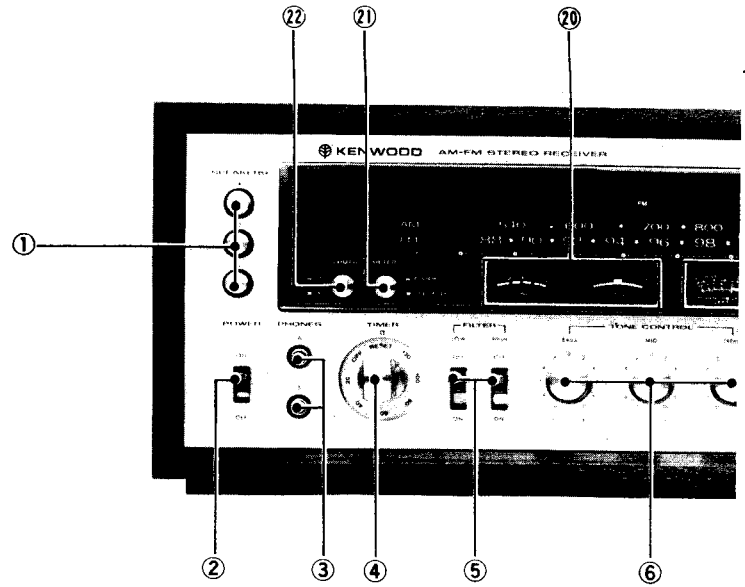
The VOLUME control performs simultaneous adjustment of volumes in both channels (right and left). Set it to your convenient listening level.
The BALANCE control adjusts unequal volume from any program source in right and left channels. The left channel is accentuated when this adjuster is turned from center toward the left side, and conversely.

⑧ INPUT SELECTOR switch

Switch positions and functions are as follows:

AM — For AM reception.

FM — For the reception of both FM monaural and stereo signals. Automatic switching operates between FM monaural and stereo sources. When an FM stereo broadcast is tuned in, the STEREO indicator lights up.



PHONO 1 — In this position the turntable is available if connected to the PHONO 1 input jacks on the rear panel.

PHONO 2 — In this position the turntable is available if conntected to the PHONO 2 input jacks on the rear panel.

MIC — In this position the microphone is available.

AUX — Selects source connected to the AUX jacks.

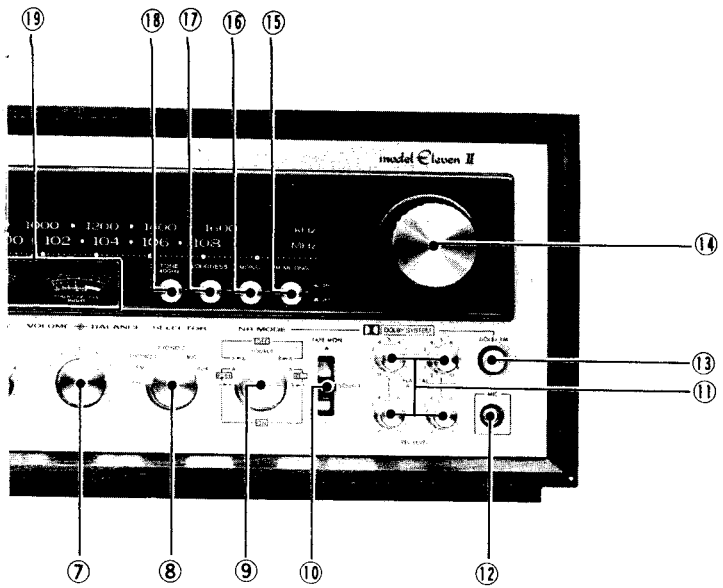
⑨ NR MODE SWITCH (For further details refer to pages 18, 19.)

Switch positions and functions are as follows.

OFF —This positions is for operating without using the Dolby unit.
SOURCE — The source signal is heard.
A ▶ B — For dubbing from a tape deck connected to TAPE A jacks into a tape deck connected to TAPE B jacks.
B ▶ A — For dubbing from B tape deck to A.

ON — This position is for operating using the Dolby unit.
Switch positions and functions are as follows.
PLAY — This position is used to playback a Dolbyized source (except Dolbyized FM).
Switch positions and functions are as follows.
A — Selects source connected to TAPE A jacks on the rear panel. To record and playback Dolbyized tapes, connect your tape deck to the rear panel TAPE A jacks. Do not connect it to the tape B jacks for Dolby operation.
A ▶ B — For dubbing from a tape deck connected to TAPE A jacks into a tape deck connected to TAPE B jacks.

CONTROLS AND THEIR FUNCTIONS



REC — For making a Dolbyized recording from an in-coming non-Dolbyized signal.
Switch positions and functions are as follows.
A — Selects source connected to TAPE A jacks on the rear panel.
B ▶ A — For dubbing from a B tape deck to A. A Dolbyized tape can be made from a non-Dolbyized tape.

⑩ TAPE MONITOR switch

Switch positions and functions are as follows.

SOURCE — The source signal is heard.

A — For monitoring a recording or for playback on a tape deck connected to the TAPE A jacks.

B — For monitoring a recording or for playback on a tape deck connected to the TAPE B jacks.

⑪ DOLBY LEVEL controls

PLAY CAL A TAPE controls — These knobs adjust the playback outputs from a tape deck to the proper Dolby level. For details refer to page on 14.

REC LEVEL controls — These knobs control the record level of the signals to be recorded through the Dolby unit. Adjust the knobs so that the LINE LEVEL Meter Pointer remains within the CAL zone of the POWER/LINE LEVEL Meter.
Do not adjust recording level with the tape deck's line volume control. Adjust with this control.

⑫ MIC jack

This ia a microphone jack for monophonic sound only.

⑬ DOLBY FM switch

Dolby FM broadcasting can be obtained by pushing this switch in whichever NR MODE is turned on.

⑭ TUNING knob

The TUNING knob selects the desired AM or FM station signal. Adjust it for maximum deflection of the SIGNAL meter as you listen to the sound output from the speakers. For FM broadcasts also observe the TUNING meter to achieve accurate reception.

⑮ FM MUTING switch

This switch silences interstation noise on the FM band, but it may also eliminate the signal of a weak and distant station along with the interstation noise. Therefore, set this switch to OFF (by pressing button release) in the reception of a weak and distant station.

⑯ MONO (Mode switch)

Mixes left and right channels when this pushbutton is "ON" position.

⑰ LOUDNESS control

The LOUDNESS control boosts bass and treble tones at low listening levels. Our ears have less sensitivity to low and high frequencies at low listening levels and the LOUDNESS control compensates for this deficiency. This control should be switched off when listening at normal and high levels.

⑱ 400 Hz TONE switch

This is used for calibration of the record input level of the tape deck. When the switch is depressed, the built-in oscillator operates and a sine wave signal will be applied to the TAPE A REC jacks.

⑲ POWER/LINE LEVEL meter

POWER — When the meter switch is pushed in, this meter indicates the strength of the output level.

LINE LEVEL — Setting the meter switch to release, this meter indicates the strength of the line level. Moreover, this meter will be used as a Dolby CAL level meter.

⑳ SIGNAL and TUNING meter

SIGNAL meter — Meter indicates signal strength for AM and FM. Maximum deflection indicates best receiving condition.

TUNING meter — This meter is used for precise tuning to the center of an FM channel. Turn the tuning knob until the meter pointer is in the center of the meter scale. This provides maximum separation and minimal distortion.

㉑ METER switch

The POWER/LINE LEVEL meter acts as a Power Meter when the METER switch is "ON", similarly acts as a Line Level Meter when the METER switch is "OFF". At the same time, with this "OFF" position acts as a Dolby CAL Level meter.

㉒ DIMMER switch

The illumination of this unit can be dimmed if desired by depressing this button.

OPERATING INSTRUCTIONS

(WITHOUT USING DOLBY UNIT)

IMPORTANT

Following instructions are for operating without using the Dolby unit.

AM-FM RECEPTION

1. Set the INPUT SELECTOR switch to AM or FM.
2. Set the MODE switch to STEREO (OFF) and the TAPE MONITOR switch to SOURCE.
3. Adjust the VOLUME control to the desired listening level.
4. Use the BASS, MID, TREBLE, FILTERS and LOUDNESS controls to adjust sound as desired and to match the acoustic conditions of your room.

PHONO OPERATION

1. Two pairs of phono input jacks, PHONO 1 and PHONO 2, are provided to enable connections to two turntables. To reproduce the output of the turntable that is connected to PHONO 1 jacks, set the INPUT SELECTOR switch to PHONO 1. To reproduce the output of the turntable that is connected to PHONO 2 jacks, set the INPUT SELECTOR switch to PHONO 2.
2. Set the MODE switch to STEREO (OFF) and the TAPE MONITOR switch to SOURCE.
3. Adjust the VOLUME to the desired listening level.
4. Use the BASS, MID, TREBLE, FILTERS and LOUDNESS controls to adjust the sound to your preference and to the acoustic conditions of your room.

TAPE DECK OPERATION

Tape Monitoring

If you use the receiver with 3-head type tape decks, you can check the sound quality of the recording that is being made by momentarily comparing the recorded signal with the source signal as follows. Set the TAPE MONITOR switch to A (or B) to monitor the recorded sound. Set the TAPE MONITOR switch to SOURCE to monitor the source signal before it is recorded.

When Recording with One Tape Deck

Connect the tape deck to either the TAPE A jacks or TAPE B jacks on the rear panel.

Recording

1. Set the INPUT SELECTOR switch to the desired program source. Set the TAPE switch to SOURCE. To monitor the recording, set the TAPE MONITOR switch to A or B, whichever side the tape deck is connected.
2. Recording level should be adjusted with the volume control of your tape deck.
3. Recording is not affected by the VOLUME, BASS, MID, TREBLE, FILTERS, LOUDNESS, etc., controls of the receiver.

When Recording with Two Tape Decks

Connect one tape deck to TAPE A jacks and the other to TAPE B jacks on the rear panel.

Recording

1. Set the INPUT SELECTOR switch to the desired program source.
2. Set the TAPE MONITOR switch to SOURCE.
3. Recordings can now be made into both tape decks simultaneously. To monitor these recordings, use the TAPE MONITOR switch as follows. Set it to A to monitor the recording being made with the tape deck connected to TAPE A jacks. Set it to B to monitor the recording being made in the tape deck connected to TAPE B jacks.
4. Recording levels should be adjusted exactly as described previously for single tape deck operation.

OPERATING INSTRUCTIONS

(WITHOUT USING DOLBY UNIT)

Playback

1. The INPUT SELECTOR switch can be in any position.
2. Set the TAPE MONITOR switch to the corresponding position (A or B).
3. Adjust volume and tonal quality.

Dubbing

Tape recordings may be easily duplicated from one tape deck to another with minimal loss of quality by setting the NR MODE switch to [OFF] — A ▶ B or [OFF] — B ▶ A as follows:

1. The INPUT SELECTOR switch can be in any position.
2. Set the NR MODE switch to [OFF] — A ▶ B when it is desired to copy recorded material on the tape deck A for re-recording on the tape deck B.
   Set the NR MODE switch to [OFF] — B ▶ A when it is desired to copy a recording on the tape deck B for re-recording on the tape deck A. The recording can be monitored. (If the TAPE MON switch is set to SOURCE position, the source signal can always be listened to even during the tape-to-tape dubbing. This is thanks to the Kenwood's THROUGH CIRCUIT.)
3. Operate both tape decks simultaneously.

OPERATING INSTRUCTIONS
(USING DOLBY UNIT)

OUTLINE OF THE DOLBY NR SYSTEM

The basic principle of the Dolby NR system is as follows. During the recording process, all low level, high frequency source signals above mid-range—the area where noise is most discernible—are boosted automatically with a Dolby compressor circuit before being put on tape. During playback, the Dolby expander circuit automatically reduces these boosted signals to their original levels. At the same time, the tape noise introduced during the recording process is also reduced by the same amount. The end result is a significant improvement in the signal to noise ratio. This means that tape noise, in effect, becomes indiscernible to the ear.

The Model Eleven II receiver boosts highest fidelity sound reproduction thanks to built-in Dolby NR System which processes signals from all sound sources. This means that FM programs can be of equivalent audio quality as those reproduced from your "denoised" tapes.

IMPORTANT

Following instructions are for operating using the Dolby unit.

RECEPTION OF DOLBYIZED FM BROADCASTS

When the transmission of Dolbyized FM broadcasts starts, the DOLBY FM pushbutton switch on the right of the front panel alone must be pushed and the DOLBY FM Decoder operates so that Dolbyized FM broadcasts are decoded and can be enjoyed. At this time the INPUT SELECTOR and NR MODE switch can be in any positions, the DOLBY FM switch only is necessary for the reception of Dolbyized FM broadcasts.

(As De-emphasis Constant from normal 75 μs to Dolbyized broadcasting 25 μs is automatically switched at DOLBY FM Switch on, it is not necessary to switch separately any knobs.)

OPERATING INSTRUCTIONS

(USING DOLBY UNIT)

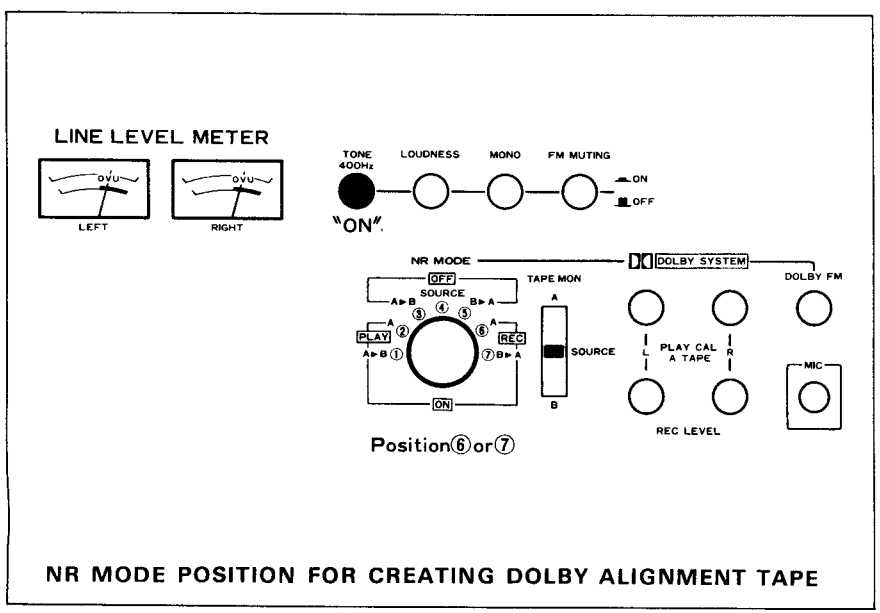
SETTING THE DOLBY STANDARD LEVEL FOR RECORDING AND PLAYBACK

The purpose of the following adjustments is to achieve the proper Dolby levels by calibrating the recording and playback signals being applied to the Dolby processors.

To perform this adjustment, the Standard Alignment Tape must be played on the Tape Deck (or Recording System) connected to the receiver. However, if you do not have a Standard Alignment Tape, you can create a Dolby Alignment Tape in the following way for Dolby Recording and playback.

TO CREATE DOLBY ALIGNMENT TAPE

1. Load a blank tape (or insert a cassette tape) on the tape deck connected to the TAPE A jacks.
2. Set the 400Hz Tone Switch to ON and the NR MODE Switch to REC -A.
3. Set the Tape Deck's Monitor Switch to its Source position and adjust the tape deck's Input Level Control so that it indicates a Recording level of 0VU.
4. In this condition, record the signal on the tape for about 1 minute. You have now created a Dolby Alignment Tape for the adjustment of your system.
5. Now switch the 400Hz Tone Switch and NR MODE Switch OFF.



NR MODE POSITION FOR CREATING DOLBY ALIGNMENT TAPE

This Dolby Alignment Tape can be used to adjust the Dolby recording characteristics of your receiver and the Tape Deck or Recording system with which it will be used. However, to adjust your system accurately to the Dolby standard level, a Dolby Standard Alignment Tape is available from Kenwood.

Open Reel and Cassette Standard Alignment Tapes can be obtained by contacting the following office.

Be sure to specify which format is desired. Mail to:

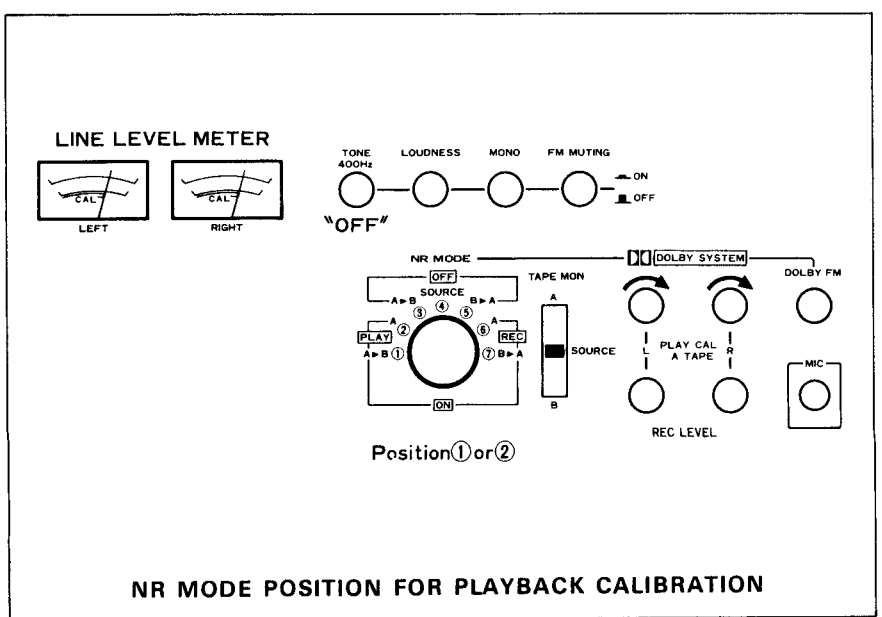
TRIO-KENWOOD CORPORATION
6-17, Aobadai 3-Chome
Meguro-Ku, Tokyo
153 Japan

OPERATING INSTRUCTIONS

(USING DOLBY UNIT)

PROCEDURE FOR PLAYBACK CALIBRATION

1. Connect a tape deck to the TAPE A jacks.
2. Set the Dolby NR MODE Switch to [PLAY] -A.
3. Set the Meter Switch to Line Level.
4. If the tape deck has a Monitor Switch, set it to Tape Play.
5. Load the Dolby Alignment Tape on the tape deck.
6. Play the Dolby Alignment Tape.
7. If the tape deck has playback level controls, adjust these so that the tape deck's VU meters indicate OVU.
8. If the tape deck does not have playback level controls, proceed to Item 9. If it does not have a VU Meter, set the level controls to about 2/3 of their maximum.
9. Adjust the PLAY CAL Controls (Left and Right) so that the LINE LEVEL Meters (Left and Right) deflect to the Dolby CAL Mark.
10. Now that Dolby Playback calibration is complete, do not adjust the PLAY CAL controls or the tape deck's Playback Level controls.



NR MODE POSITION FOR PLAYBACK CALIBRATION

It will be necessary to re-calibrate the Dolby levels in the following case:

1) when using tapes of different types (standard, low-noise, CrO_2, etc.),
2) when changing the setting of the tape deck.

Otherwise, the controls will be set incorrectly. To avoid making mistakes after having set the controls, mark their positions with ribbon tape after making the adjustment.

PROCEDURE FOR RECORD CALIBRATION

Without having calibrated the playback system, the recording system cannot be calibrated, so first calibrate the playback system. As for playback calibration, calibrate the recording system with a tape loaded on the tape deck connected to the TAPE A jacks.

For Tape Decks with Three Heads

1. Load a blank tape or cassette tape to the tape deck (or insert a cassette tape).
2. Set the Dolby NR MODE switch to [REC] -A.
3. Set the tape deck's monitor switch to Tape.
4. Set the 400Hz TONE switch to ON.
5. Set the tape deck to the recording mode.
6. Adjust the tape deck's input level controls so that the tape deck's VU meters indicate OVU.
7. Set the 400Hz TONE switch OFF.

For Tape Decks with Two Heads

1. Load a blank tape or insert a cassette tape in the tape deck.
2. Set the NR MODE switch to [REC] -A.
3. Set the 400Hz TONE switch to ON.
4. Set the tape deck in the recording mode.
5. Adjust the tape deck's input level controls so that the tape deck's VU meters indicate OVU.
6. Now record the signal on the tape for about 15 seconds.
7. Set the 400Hz TONE switch OFF and stop the tape deck, rewind the tape.

OPERATING INSTRUCTIONS

(USING DOLBY UNIT)

8. Set the Dolby NR MODE switch to [PLAY] -A and the Meter switch to LINE LEVEL.
9. Set the tape deck for playback.
10. Observing the right and left Level Meters, see if they deflect to the Dolby CAL Mark. If they do, the calibration is correct.
11. If the Level meters do not deflect to the Dolby CAL Mark, go back to Item 2 and further adjust the tape deck's input level controls are described in Item 5. At this time, do not adjust the tape deck's playback level controls.

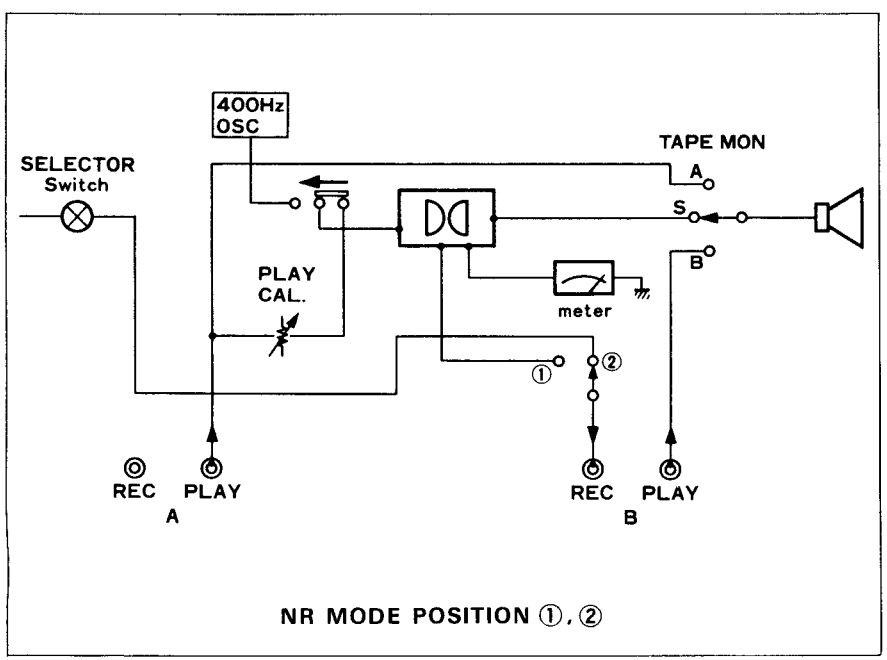
For Tape Decks of Which Record and Playback Level Controls Are the Same

This type of tape deck is such that one control must be used to calibrate the recording and playback levels. After calibrating the recording (playback) level, mark the position of the knob. Then perform the adjustment of the playback (recording) system with reference to the marked position. Apart from this, calibrate in the same way as with a two-head deck.

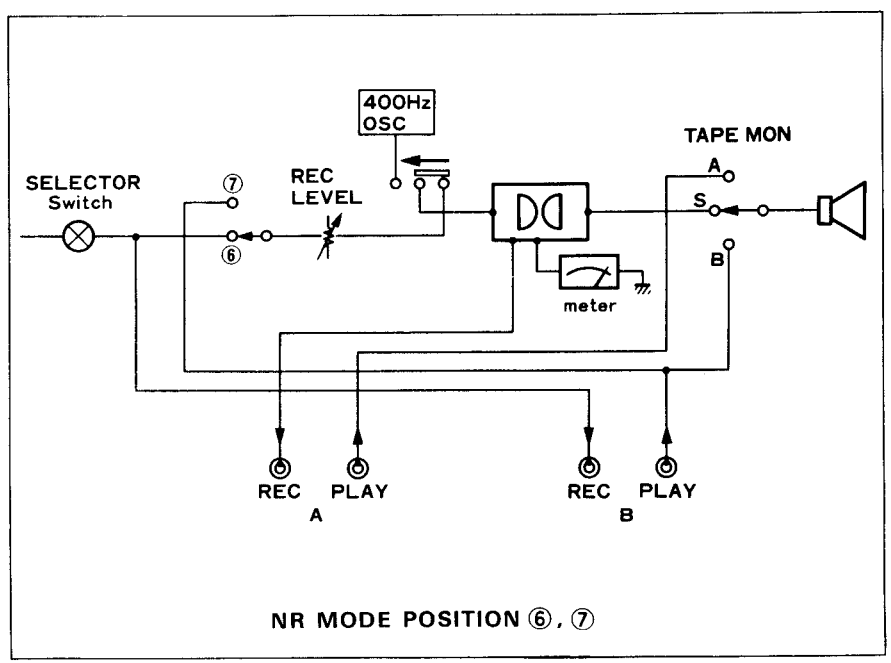
This concludes the adjustment portion. For recording and playback, perform the following procedure:

Dolbyized Recording from an In-coming "Flat" (Non-Dolbyized) Signal

1. Connect a tape deck to the TAPE A jacks and set the controls to the positions determined in CALIBRATION.
2. Set the INPUT SELECTOR switch to correspond to the input from which you are to record (AM, FM, PHONO, AUX, MIC or Tape B).
3. Set the NR MODE switch to [REC] -A or [REC] -B ▶ A.
4. **Adjust the REC level controls so that the Level Meter deflection is correct (around 0dB). At this time, do not adjust the tape deck's Input and Output Level Controls. All adjustments should be with the REC level control.**
5. Set the tape deck to the recording mode.



NR MODE POSITION ①, ②



NR MODE POSITION ⑥, ⑦

OPERATING INSTRUCTIONS

(USING DOLBY UNIT)

Recording Dolbyized FM Broadcasts

If the receiver has been calibrated to make Dolbyized recordings, simply set the DOLBY FM switch to ON to make Dolbyized recordings, adjusting the Recording level with the recording level control.

After decoding, a flat signal can be recorded on Tape B.

To Play Back Dolby Tape

1. If the tape deck connected to the Tape A terminals has not been calibrated, do this. (See page 14 "PLAYBACK CALIBRATION".)
2. Set the TAPE MON switch to A.
3. Set the NR MODE switch to [PLAY] -A.
4. Playback using the tape deck.

At this time, if there is a tape deck connected to the Tape B terminals, in the normal way, Decoded signals with a flat frequency characteristic can be recorded.

Dubbing Dolby Encoded Tape from Tape A to Tape B

Dubbing is done by using the NR MODE switch. When recording on the deck connected to the tape B terminals from the deck connected to the tape A terminals, calibrate by adjusting their output level controls in conjunction with each other.

("DOLBY MODE CHART" is furnished on pages 18 and 19 for your ready reference.)

AC VOLTAGE SELECTION AND POWER FUSE

The Model Eleven II operates on 110 ~ 120 volts or 220 ~ 240 volts AC. The AC Voltage Selector Switch on the rear panel is set to the voltage that prevails in the area to which the receivers are shipped. Before operating this receiver, make sure that the position of the AC Voltage Selector Switch matches your line voltage. If not, it must be changed to the proper setting.

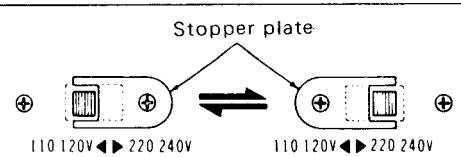
To change, first disconnect the AC line cord. Then remove the stopper plate and slide the AC Voltage Selector Switch to the opposite side. Then reattach the stopper plate to the other side.

When the position of the AC Voltage Selector Switch is changed, it is also necessary to change the power fuse.

If the power fuse fails, remove blown fuse and replace with the same type fuse of the same capacity. Any trouble in the power supply circuit will cause the fuse to blow again. In such a case, consult a qualified serviceman.

When you replace the fuse, turn the fuse holder in the direction of the arrow using Phillips screw driver. In some districts, the set will be provided with another type of fuse holder, which allows easy replacement of the fuse without using the Phillips screw driver.

NOTE: Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC Voltage Selector Switch.



1. Remove screw and stopper plate.
2. Switch lever to opposite side.
3. Lock lever by attaching stopper plate to opposite side screw.

AC VOLTAGE SELECTOR SWITCH

SPECIFICATIONS

FM TUNER SECTION (IHF)

Usable Sensitivity	10.3 dBf (1.8 μV at 75 ohms)
50 dB Quieting Sensitivity	17.3 dBf (4.0 μV at 75 ohms)
Signal to Noise Ratio at 65 dBf	75 dB
Total Harmonic Distortion	0.2% at 1,000 Hz (Mono)
at 65 dBf	0.4% at 1,000 Hz (Stereo)
Capture Ratio	1.5 dB
Alternate Channel Selectivity	60 dB
Spurious Response Ratio	80 dB
Image Response Ratio	60 dB
AM Suppression Ratio	55 dB
IF Response Ratio (balanced)	100 dB
Stereo Separation at Wide Band	40 dB at 1,000 Hz
Antenna Impedance	300 ohms balanced and 75 ohms unbalanced
FM Frequency Range	88 MHz to 108 MHz

AM TUNER SECTION

Usable Sensitivity	20 μV
Signal to Noise Ratio	50 dB
Image Response Ratio	50 dB
Selectivity	30 dB

POWER AMPLIFIER SECTION

Power Output	80 watts per channel minimum RMS at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.3% total harmonic distortion
Both Channels Driven	85 watts per channel into 8 ohms at 1,000 Hz 110 watts per channel into 4 ohms at 1,000 Hz
Dynamic Power Output	340 watts into 4 ohms
Total Harmonic Distortion	0.3% at rated power into 8 ohms 0.05% at 1 watt into 8 ohms
Inter Modulation Distortion	0.1% at rated power into 8 ohms
(60 Hz : 7,000 Hz = 4 : 1)	0.05% at rated power into 8 ohms
Power Bandwidth	10 Hz ~ 60,000 Hz
Damping Factor	50 at 8 ohms
Speaker Impedance	Accepts 4 ohms to 16 ohms

PRE-AMPLIFIER SECTION

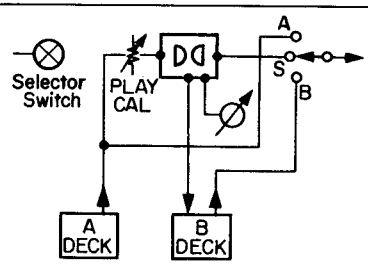
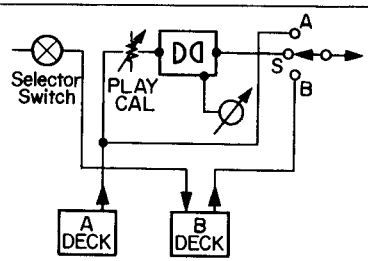
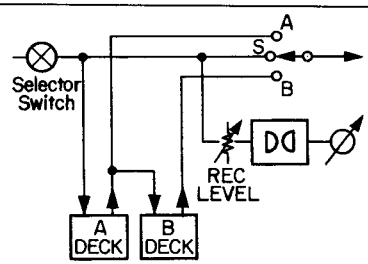
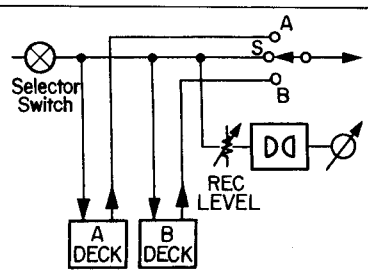
Input Sensitivity, Impedance, Signal to Noise Ratio	
Phono 1	2.5 mV, 50kohms, 77 dB
Phono 2	2.5 mV, 50kohms, 77 dB
AUX	150 mV, 50kohms, 95 dB
Tape Play A, B	150 mV, 50kohms, 95 dB
MIC	2.5 mV, 50kohms, 70 dB
Output Level, Impedance (Dolby Off)	
Tape Rec (pin)	A: 150 mV, 100 ohms
	B: 150 mV, 100 ohms
(DIN)	A: 30 mV, 80 kohms
	B: 30 mV, 80 kohms
Pre Out	1V 50kohms
Frequency Response	
Phono 1, 2	RIAA Standard curve ±0.5 dB
AUX, Tape Play	20 Hz ~ 40,000 Hz ±1.0 dB
Tone Controls	
Bass	±10 dB at 100 Hz
MID	±10 dB at 800 Hz
Treble	±10 dB at 10 kHz
Loudness (−30 dB)	+10 dB at 100 Hz
	+5 dB at 10 kHz
Low Filter	−10 dB at 100 Hz
High Filter	−10 dB at 10 kHz

GENERAL

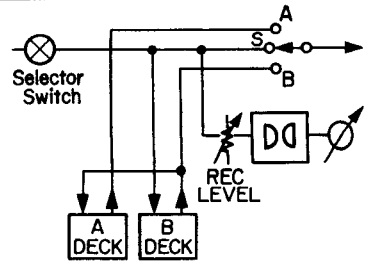
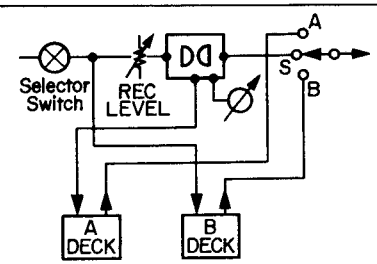
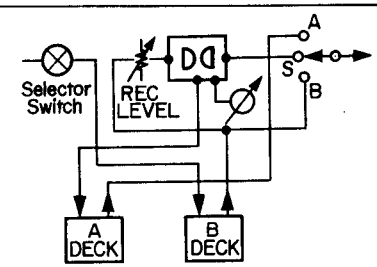
AC Outlet	Switched 1, Unswitched 1
Power Requirement	50/60 Hz 110 ~ 120V, 220 ~ 240V
Power Consumption	560 watts at full power
Dimensions	W 22-19/32" (574mm), H 7-3/4" (198 mm). D 14-3/4" (375 mm)
Weight (Net)	39 lbs (17.7 kg)

NOTE: Specifications and the design subject to possible modification without notice due to improvements.

DOLBY MODE CHART

NR MODE SWITCH / POSITION	NR MODE	BLOCK DIAGRAM
①	The Dolbyized tape of the tape deck A can be played back and copied. **TAPE MON Switch "SOURCE"**... Playback sound of the Dolbyized tape **"A"** ..... Sound before passing through the Dolby circuit **"B"** ..... Copied sound	
②	Dolbyized tape of the tape deck A can be played back. **TAPE MON Switch "SOURCE"**... Playback sound of the Dolbyized tape **"A"** ..... Sound before passing through the Dolby circuit **"B"** ..... Recorded sound on the tape deck B	
③	The signal does not pass through the Dolby circuit with the switch set to this position. **TAPE MON Switch "SOURCE"**... Sound selected by the SELECTOR switch can be listened to while dubbing from A to B at SOURCE. **"A"** ..... Playback sound of the tape deck A **"B"** ..... Playback sound of the tape deck B	
④	When the Dolby circuit or the dubbing circuit is not used, set the switch to this position (usual position).	

DOLBY MODE CHART

⑤	The signal does not pass through the Dolby circuit with the switch set to this position. **TAPE MON Switch "SOURCE"**... Sound selected by the SELECTOR Switch can be listened to while dubbing from B to A at SOURCE **"A"** ..... Playback sound of the tape deck A **"B"** ..... Playback sound of the tape deck B	
⑥	When recording through the Dolby circuit, set the switch to this position. **TAPE MON Switch "SOURCE"**... Sound selected by the SELECTOR switch can be listened to. **"A"** ..... Encoded sound on the tape A can be monitored. **"B"** ..... Recorded sound on the tape B can be monitored. **Note:** The tape A is the only tape that can be Dolby-recorded.	
⑦	When modifying the Non-Dolbyized tape to the Dolbyized tape, set the switch to this position. The played back signal on the tape deck B passes through the Dolby circuit, to be recorded on the tape deck A.	
⑧	**TAPE MON Switch "SOURCE"**... Encoded sound of the tape B. By depressing the DOLBY FM switch, the Dolbyized broadcasts can be heard or recorded preferentially. The relationship between the NR MODE switch and the signal at this time is as follows. ①..... Decoded Dolby broadcasts will be recorded and listened to. ② ④ ⑤ ⑥ ⑦..... Sound selected by the SELECTOR switch (except for AM) is recorded on the tape B. ③..... Dolby FM broadcasts will be copied on the tape deck B.	———